

## 7-4: Compound Interest

**Warmup:** Evaluate to the nearest hundredth.

1.  $5000(1.07)^4$

2.  $2500(1.0625)^3$

3.  $3000\left(1 + \frac{.064}{4}\right)^{4 \cdot 5}$

4.  $10000\left(1 + \frac{.085}{12}\right)^{12 \cdot 3}$

What is compound interest?

*Compounding:*

*Principal (Not Dr. Reimann):*

*Annual Compound Interest Formula:*

\*\*\*This formula will only work when compounding **annually**.

*Example 1:* Fuzzy Jeff invested \$4000 in an account with an annual yield of 6.2% for 4 years. How much interest does he earn?

Unfortunately, not everything is compounded annually:

*Semi-annually:*

*Quarterly:*

*Monthly:*

This breaks up the interest rate into 2, 4, 12, etc. parts. It also takes the number of times we compound per year up. We need to account for this.

*General Compound Interest Formula:*

Example 2: Maggie Brann invests \$3500 at an annual yield of 5.3%, compounded quarterly for 5 years. How much money will she have if she leaves it all in the bank?

*Homework:*

*"I'm not going to die because I failed as someone else. I'm going to succeed as myself." -  
Margaret Cho*